VOL. XI. DECEMBER, 1902. PART III.

FOUNDRY COSTS.

Engineering Magazine, Sept. Cost accounts are occupying much space in the technical press. Mr. Percy Longmuir discusses the method of recording them and then interpreting the results. The usual methods are discussed and criticised severely, it being held that essential information is lacking. On the other hand, where the information is very detailed, and the results from week to week are plotted graphically, the manager is able to determine at once where the trouble from excessive costs may lie. Mr. Longmuir gives a number of charts which show the fluctuations for the labor, molder, core maker, and other costs very forcibly. A good working line is given, a cautious line, a danger line, and in one case, a works was running below profit. For those who make a study of different methods of showing up details of cost, the article of Mr. Longmuir is recommended.

FOUNDRY QUESTIONS.

Stahl und Eisen, Sept. 1. In an address by Mr. Bernhard Osann, of Engers on the Rhine, delivered before the German Foundrymen's Association, he discusses the influence of American foundry practice on that of other countries. He depricates the usual practice of putting our foundry methods at the head of the industry, and thinks that we have just as many faults as others. He quotes the opinions expressed at the Buffalo convention of our Association, claiming that the opposition shown to the use of foundry chemistry proved his contention. Nevertheless, Mr. Osann emphasizes the fact that Germany must watch American foundry practice closely. He holds further that those of our methods which do not lead to economical results are carefully excluded from the press, which is hardly the case. However, Mr. Osann cannot praise our desire to interchange ideas too highly. He gives the "Foundry" a specially complimentary send-off, and even voices his surprise at the fact that the American, whom he supposes a "temperance" advocate, can get up such excellent "smokers" etc., as at the convention of

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our foundrymen. American foundry methods are not to be imitated in Germany, but only utilized, for the conditions under which we work are entirely different. Mr. Osann now describes in detail our mechanical and metallurgical appliances, with which we are sufficiently familiar.

TESTING IRON IN SMALL FOUNDRIES.

The Mechanical World. Mr. W. J. May comments upon the methods by which iron should be treated in the small jobbing foundries. After discussing the undesirability of small foundries, he suggests the use of all scrap mixtures for these places. By sorting this scrap into soft, medium and hard irons, and throwing all unsortable material into piles for grate bar work, it is melted up in the cupola, using good coke and plenty of blast. Where the castings are to be machined, a little No. 3 foundry pig is recommended. Furthermore, it is advised to melt up the scrap and run into pigs, before using the iron for casting at all. We rather fear that this advice would mean pretty dear and hard iron eventually getting into castings, unless the English scrap is much softer than ours.

CONSTRUCTION TEST.

The Iron Age, Nov. 13. Mr. Asa W. Whitney describes his automatic chill test for cast iron. His aim was first to preserve a continuous contact of the test piece with the chill block, and secondly to indicate automatically the progression and extent of this contraction. Mr. Whitney uses the frustrum of a cone whose bottom diameter is 5 per cent. less than the top diameter. The test piece can thus easily drop out of the mold afterwards. The method he proposes is described at length, and would seem to be intended to replace the usual crude ways of determining the chilling capacities of an iron. We will await further developments of the matter before discussing it at length, as it is given by Mr. Whitney tentatively, he evidently being still at work developing the project in order to show practical results by its use.

"TRUSTS."

The Iron Trade Review, April 17, gives Mr. Charles Kirchhoff's address on the above subject, as delivered before the Philadelphia

Foundrymen's Association. He thinks that "consolidation" is the right word to use, the meaning of "trust" in the popular mind being one of the monopoly. As a matter of fact not one of the consolidations can ever be a monopoly, though they are certainly "dominant" in their respective industries. The movement toward consolidation is inevitable at the present day. What the ultimate effect will be remains to be seen. The fear of a monopoly in the iron industry is gradually disappearing, as no one corporation can control the mineral resorces of the country. Coal covers so vast an area that no one concern can ever own it. Ore is liable to be found anywhere, both in this country and in others. It is thought sometimes that the securing control of the richest deposits will give a monopoly, yet after all this advantage has always been at once capitalized and is therefore lost. The existing consolidations have large expenditures to make to keep their plants up to the standard set by the new independent plants, and oftentimes parties who have sold out re-enter the business to sell out again. The manufacturing capacity has been increased and the individual producer has not suffered. Unfortunately there has been much stock gambling going on, and this has given consolidations a bad name. The reduction of the number of individuals in an industry makes it much easier to get together to adjust difficulties. At first service was peculiarly bad owing to the confusion created, but this is now happily adjusted. The consumer, as a rule, will always give the outside producer the perference in order to foster competition. Then again the consolidations have adopted liberal policies, but have done away with many abuses formerly tolerated. To keep the plants running full the time will come that much export business must be done. This costs more, and very probably the domestic market must stand it, the consumer's market always making the prices. An interesting discussion followed the address, Mr. Kirchhoff's exposition of the advantages and disadvantages of the so-called "trusts" being considered very fairly stated.

FOUNDRY PROGRESS.

American Machinist, Nov. 6. Mr. Harris Tabor gives a very interesting story of recent foundry progress in connection with the anniversary number of this journal. Writing from the standpoint of the mechanical engineer, this development of the foundry from

the crude methods in vogue 25 years ago to more exact lines in use to-day has helped the machine tool builder to create the enormous demand for American machinery by reducing the shop costs. The wonderful advancement of the molder's art, Mr. Tabor says, is apparent on comparing the steam engine of to-day with that of a quarter century ago. The success of the foundry in America is due to specialization. The duplication of work has made it adopt labor saving methods. The molding machine has become part of the modern foundry equipment, and this has been vastly improved in recent years so that better facilities are now given the molders than was the case in former days. Mr. Tabor concludes with a plea for helping the "man behind the gun" in the foundry in order that this may retain its advanced rank among the industries of the world.

CALCULATING THE WEIGHT OF CASTINGS.

American Institute of Mining Engineers. Mr. C. M. Schwerin illustrates a new method of calculating the weight of a casting. Instead of weighing the pattern he takes the drawings, makes a blueprint, mounts this on a card bord and uses the planimeter on the section, which in connection with the general dimensions enables a pretty close calculation to be made. The method is illustrated by two examples. That of a 650 lb. car wheel which was calculated to be 649.93 lbs. from the drawings, and that of a 700 lbs. wheel came out 700 lbs. exactly. The method has the great advantage of enabling the designer to get a given weight without actually having the patterns and castings made by the usual cut and try methods.

ACTION OF LIGHT ON COLORED BRASS LACQUERS.

The Brass Founder and Finisher, Oct. 15. In the Journal of Societyfor Chemical Industry Mr. H. Smith discusses the lacquers applied to brass to keep it from tarnishing. Lacquer is known as "cold" and"hot"as applied upon cold or hot metal. "Cold" lacquer is a solution of nitrocellulose spread upon the metal with a brush just as in varnishing. "Hot" lacquer is usually seed-lac dissolved in methylated spirit. This lacquer is usually colored to get a gold or copper tint. To determine the lasting qualities of the various colors when exposed to sunlight a number of experiments were made with the following results: (1) Vegetable coloring matters such as tumeric, saffron, dragon's blood, annotto, fade completely. (2) Tumeric,

saffron and annetto also turn the brass black. (3) The aniline colors, metanil, yellow, ansamine, and primrose are good for yellow lacquers. as they do not turn brass black. (4) Dragon s blood is more suitable for copper colored lacquer than sandal-wood. (5) Gamboge is best suited for yellow and golden lacquers, as it does not fade or blacken brass.

INFLUENCE OF SILICON ON THE ANNEALING PROCESS.

Stahl und Eisen, No. 15. Prof. A. Ledebur gives some facts on the influence of silicon which are interesting to the maker of malleable castings. While it was formerly considered necessary to have a low silicon contents in the hard castings in order to properly malleablize them, it is now known that at least .40 per cent. is necessary, and that 1 per cent. is not dangerous provided no graphitic carbon is separated out in the casting. It has been proven that the carbon of the hard casting does not leave during the annealing process until the combined carbon has been changed into temper carbon. The easier this is accomplished the quicker will be the annealing process. To determine the effect of silicon on the process five samples were taken and heated under various conditions. The first sample, 0.07 silicon, could not be annealed at all. The second piece, with 0.27 silicon, took almost the melting point of iron to anneal it partially. No. 3, with 0.80 silicon, showed traces of annealing when heated up to 1675° F. No. 4, with 1.25, and No. 5, with 2.10 silicon (the latter having 0.2 graphite) showed annealing at the temperature of 1200° F. All of this goes to prove that the higher the silicon the easier is the change from combined carbon to temper carbon. Further experiments proved that the higher the silicon the lower the temperature required and the higher the temperature and silicon the quicker the change.

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